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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/673,063 01/04/01 MICHENFELDER

G 10191/1583

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EXAMINER

STAFIRA, M

ART UNIT

PAPER NUMBER

2877

DATE MAILED:

05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/673,063

Applicant(s)
Michenfelder et al.

Examiner
Michael P. Stafira

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2877



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on filing date Jan. 4, 2001.

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 20-41 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 20-41 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2

20) ☐ Other:

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claim 37 is objected to because of the following informalities:

In claim 37, line 2 "if an infrared light is used" makes the claim sound like the condition will never be satisfied. Examiner suggest that the claimed be changed so that infrared light is used and that the light conducting element is formed of a black plastic. The examiner is going to examine the claim as if infrared light is used. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

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4. Claims 20-24,27-29,38,41 are rejected under 35 U.S.C. 102(e) as being anticipated by Teder ('303).

Claim 20

Teder ('303) discloses a housing (Fig. 3, Ref. 28) including a light conducting element (Fig. 2, Ref. 24) forming a cover of the housing (Col. 6, lines 24-28); and a plurality of optical and electronic components mounted in the housing including at least one transmitter (Fig. 3, Ref. 56) for transmitting an electromagnetic wave and at least one receiver (Fig. 3, Ref. 58) for receiving the electromagnetic wave, the measuring distance influencing a wave propagation between the at least one transmitter and the at least one receiver such that when a coating forms on the windshield, an output signal sensed by the at least one receiver is changed (Col. 7, lines 38-42; Col. 9, lines 12-19).

Claim 21

The reference of Teder ('303) further discloses that the rain sensor is used in a motor vehicle (Col. 6, lines 31-34).

Claim 22

Teder ('303) further discloses the coating is a result of wetting by precipitation (Col. 9, lines 12-19).

Claim 23

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The reference of Teder ('303) further discloses the light conducting element (Fig. 2, Ref. 24) forms a base plate (Fig. 2, Ref. 42) of the housing (Fig. 3, Ref. 28) and includes a broad area of connection with the windshield (Fig. 3, Ref. 18) (Col. 6, lines 34-41, 52-57).

Claim 24

Teder ('303) further discloses a common printed board (Fig. 3, Ref. 26) on which is mounted the plurality of optical (Fig. 3, Ref. 56, 58) and electronic (Fig. 3, Ref. 80A, 80B, 80C) components in accordance with SMD technology (Col. 7, lines 34-38).

Claim 27

The reference of Teder ('303) further discloses that the rain sensor is cemented (Col. 6, lines 40-41) to an inside of the windshield (Col. 6, lines 29-45).

Claim 28

Teder ('303) further discloses a transparent film (Fig. 2, Ref. 36) that is self-adhesive on each side thereof and corresponds to a connection between the windshield and the light conducting element (Col. 6, lines 40-45).

Claim 29

The reference of Teder ('303) further discloses that the output signal is provided to a downstream analysis circuit (Fig. 3, Ref. 80A, 80B, 80C, 80D) and includes information with respect to an instantaneous degree of wetting of the windshield (Col. 8, lines 35-51; Col. 9, lines 12-18).

Claim 38

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Teder ('303) further discloses that the light conducting element includes optical areas formed from transparent plastic for at least one receiver (Col. 6, lines 46-54).

Claim 41

The reference of Teder ('303) further discloses the light conducting element (Fig. 2, Ref. 24) includes integrated lens structures (Fig. 2, Ref. 38, 40) for light bundling (Col. 6, lines 52-64).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder ('303) as applied to claim 24 above, and further in view of Zettler et al. ('245).

Claim 25

Teder ('303) substantially teaches the claimed invention except that it does not show an integrated connector for an electrical connection to a downstream analysis unit. Zettler et al. ('245) shows that it is known to provide an integrated connector (Fig. 3, Ref. 46) for an electrical connection to a downstream analysis unit (Col. 3, lines 5-13) for a remote connection sensor. It would have been obvious to combine the device of Teder ('303) with the integrated connector of Zettler et al. ('245) for the purpose of providing signals to turn-on a wiper assembly when

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moisture is detected on the windshield. It is obvious to one skilled in the art to know that the motor assembly of Zettler et al. ('245) would have some sort of analysis unit to determine when to turn-on or turn-off the motor assembly, therefore the reference of Zettler et al. ('245) reads on applicants claim.

The reference of Teder ('303) further discloses that the housing (Fig. 3, Ref. 28) corresponds to a rectangular-shaped sensor housing (See Figure 3).

Claim 26

Teder ('303) substantially teaches the claimed invention except that it does not show contact pins through which the printed circuit board is connected to the integrated connector. Zettler et al. ('245) shows that it is known to provide contact pins (See Fig. 3) through which the printed circuit board (Fig. 3, Ref. 42) is connected to the integrated connector (Fig. 3, Ref. 46) (See Fig. 3) for a external connection to a sensor. It would have been obvious to combine the device of Teder ('303) with the contact pins of Zettler et al. ('245) for the purpose of providing signals to turn-on a wiper assembly when moisture is detected on the windshield.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teder ('303) as applied to claim 29 above, and further in view of Reime ('531).

Claim 30

Teder ('303) substantially teaches the claimed invention except that it does not show at least one of a windshield wiper mechanism and a vehicle lighting system is activated as a function

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of the output signal. Reime ('531) shows that it is known to provide a windshield wiper mechanism and a vehicle lighting system is activated as a function of the output signal (Col. 3-4, lines 25-14) for a integrated optical sensor system. It would have been obvious to combine the device of Teder ('303) with the windshield wiper mechanism and a vehicle lighting system of Reime ('531) for the purpose of providing compact construction when two different conditions are being measured.

8. Claims 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder ('303) as applied to claim 20 above, and further in view of Watanabe et al. ('613).

Claim 31

Teder ('303) substantially teaches the claimed invention except that it does not show the one transmitter includes at least one LED. Watanabe et al. ('613) shows that it is known to provide at least one transmitter that includes at least one LED (Fig. 1, Ref. 24; Col. 3, lines 67-68) for a optical rain sensor. It would have been obvious to combine the device of Teder ('303) with the LED of Watanabe et al. ('613) for the purpose of providing a long lasting reliable light emitting source when used in a harsh environment.

Claim 32

Teder ('303) substantially teaches the claimed invention except that it does not show a first one of the at least one receiver that detects an optical signal emitted by the at least one LED includes a photodiode. Watanabe et al. ('613) shows that it is known to provide a receiver that

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detects an optical signal emitted by the LED includes a photodiode (Fig. 1, Ref. 25; Col. 4, lines 3-7) for an optical rain sensor. It would have been obvious to combine the device of Teder ('303) with the LED and photodiode of Watanabe et al. ('613) for the purpose of providing a long lasting reliable light receiving element when used in harsh environments.

9. Claims 33, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder ('303) as applied to claim 20 above, and further in view of O'Farrell et al ('917).

Claim 33

Teder ('303) substantially teaches the claimed invention except that it does not show the at least one receiver includes at least one ambient light sensor. O'Farrell et al ('917) shows that it is known to provide at least one receiver that is an ambient light sensor (Col. 10, lines 18-25) for a vehicle moisture sensor. It would have been obvious to combine the device of Teder ('303) with the ambient light sensor of O'Farrell et al ('917) for the purpose of providing reference energy levels due to external vehicle light conditions.

Claim 34

Teder ('303) in combination with O'Farrell et al. ('917) discloses the claimed invention except for the at least one ambient light sensor includes an aperture angle of approximately 40 degrees inclined upward with an aperture direction in a direction of travel. It would have been an obvious matter of design choice to angle the aperture at 40 degrees, since applicant has not disclosed that having the aperture at 40 degrees solves any stated problem or is for any particular

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purpose and it appears that the invention would perform equally well with the 25 degree aperture (Col. 7, lines 3-6) disclosed in O'Farrell et al. ('917).

10. Claims 35, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder ('303) in combination with O'Farrell et al. ('917) as applied to claim 34 above, and further in view of Hasch et al. ('669).

Claim 35

Teder ('303) in combination with O'Farrell et al. ('917) substantially teaches the claimed invention except that it does not show the at least one ambient light sensor is sensitive to ultraviolet light. Hasch et al. ('669) shows that it is known to provide at least one ambient light sensor that is sensitive to ultraviolet light (See Abstract; Col. 4, lines 40-56) for a vehicle moisture sensor. It would have been obvious to combine the device of Teder ('303) in combination with O'Farrell et al. ('917) with the sensitivity to ultraviolet light of Hasch et al. ('669) for the purpose of providing a sensor system that reacts to subsequent changes in the ambient conditions. It is obvious to one skilled in the art to know that the reference of Hasch et al. ('669) is sensitive to ultraviolet light because the optical sensor of Hasch et al. ('669) measures ambient light for a vehicle and therefore would naturally measure sunlight which contains ultraviolet light.

Claim 36

Teder ('303) in combination with O'Farrell et al. ('917) substantially teaches the claimed invention except that it does not show the ultraviolet light corresponds to sunlight. Hasch et al.

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(‘669) shows that it is known that ultraviolet light corresponds to sunlight (See Abstract; Col. 4, lines 40-56) for a vehicle moisture sensor. It would have been obvious to combine the device of Teder (‘303) in combination with O’Farrell et al. (‘917) with the ultraviolet light of Hasch et al. (‘669) for the purpose of providing a sensor system that reacts to subsequent changes in the ambient conditions. It is obvious to one skilled in the art to know that the reference of Hasch et al. (‘669) measures ambient light from a vehicle optical sensor, therefore it would naturally measure ultraviolet light which corresponds to sunlight.

11. Claims 37, 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder (‘303) as applied to claim 20 above, and further in view of Zettler et al. (‘245).

Claim 37

Teder (‘303) substantially teaches the claimed invention except that it does not show when infrared light is used the light conducting element is formed of a black plastic. Zettler et al. (‘245) shows that it is known to provide a molded light conducting element (Fig. 3, Ref. 34, 36) that is formed of black plastic when infrared light is used (Col. 2, lines 56-58) for a moisture activated wipe sensor. It would have been obvious to combine the device of Teder (‘303) with the conducting element of Zettler et al. (‘245) for the purpose of providing filtered light to a detector so as to prevent other wavelengths from being sensed. It would be obvious to one skilled in the art to know that the color molded plastic (Col. 2, lines 56-58) of Zettler et al. (‘245) which passes infrared light would be a black color so as to block the primary colors of light.

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Claim 39

Teder ('303) in combination with Zettler et al. ('245) disclose the claimed invention except for the light conducting element includes a plastic part formed according to a two-color injection molding process. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Teder ('303) in combination with Zettler et al. ('245) with the two-color injection molding process since it was well known in the art that lenses or filters are manufactured in a injection mold process according to the type of wavelengths to be filtered because it reduces the amount of optical element in a compact sensor system. A typical injection molded filter would be found on a regular infrared TV remote control which are typically black.

Claim 40

Teder ('303) in combination with Zettler et al. ('245) discloses the claimed invention except for the light conducting element is formed by combining two single-color plastics. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Teder ('303) in combination with Zettler et al. ('245) with the two single-color plastics since it was well known in the art that combining two single-color plastics provides a low cost to manufacture and reduce the amount of space needed in a optical sensor.

Conclusion

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12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 6,097,167; 6,052,196; 6,018,165; 5,498,866; 5,414,257; 5,262,640; 5,203,207; 4,973,844 disclose vehicle moisture sensor systems.

13. If the applicant wishes to send a Fax dealing with either a proposed amendment or for discussion for a phone interview, then the Fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax cover sheet; and

2) Should be unsigned by the attorney or agent.

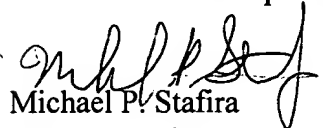
This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is:

(703) 308-7722

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Examiner Michael P. Stafira* whose telephone number is (703) 308-4837.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.


Michael P. Stafira
Patent Examiner
Art Unit 2877

May 17, 2000/mps